

FIG. 1A
PRIOR ART

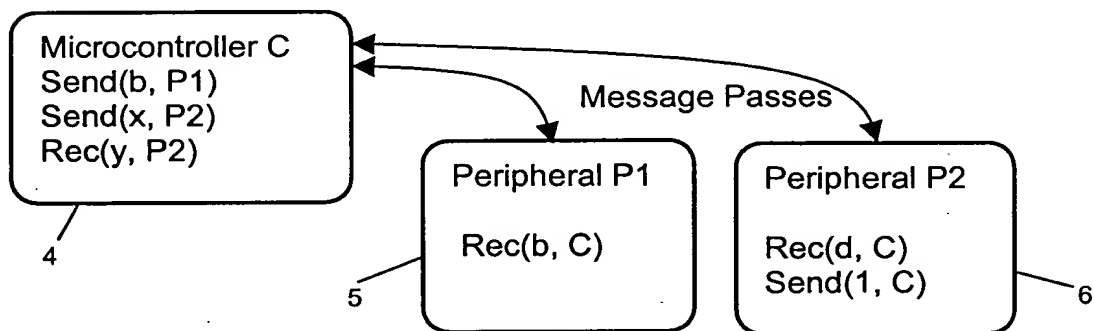


FIG. 1B
PRIOR ART

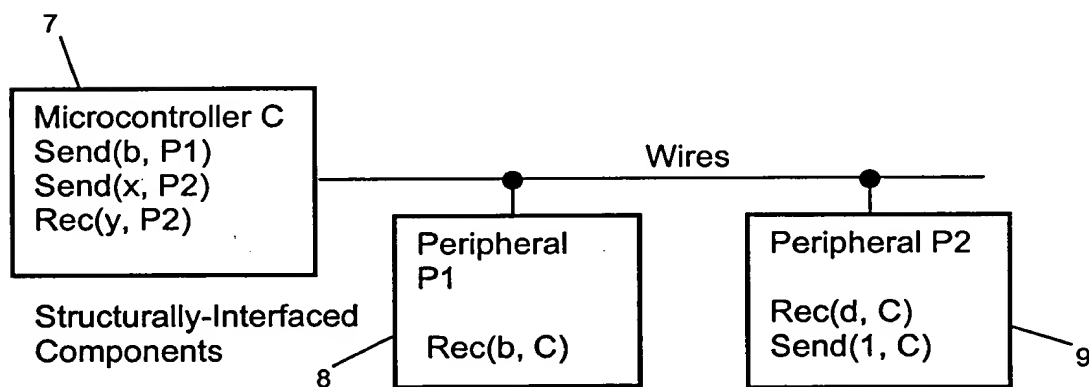


FIG. 1C
PRIOR ART

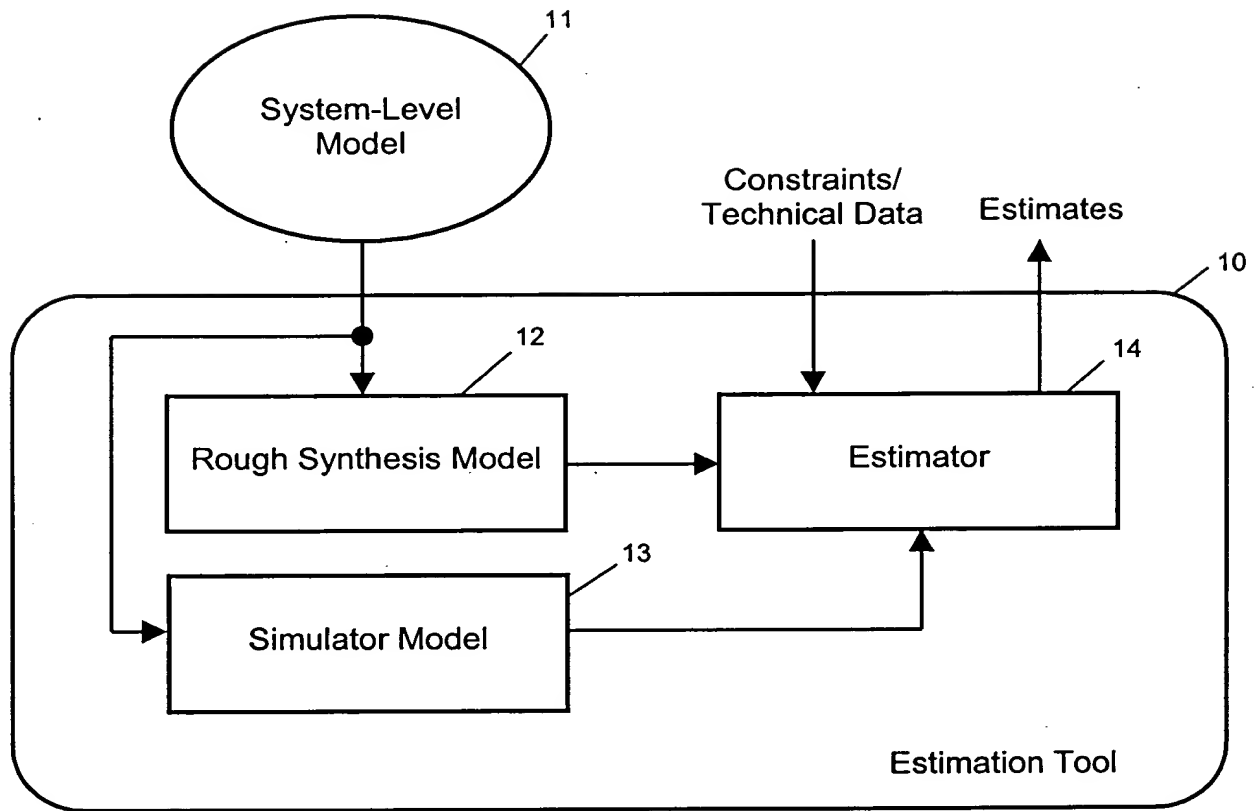


FIG. 2
PRIOR ART

Buffer Size (bytes)	Area (transistors)	Toggle-Count
2	4552	203
4	7360	232
8	1576	238
16	22600	249

FIG. 3

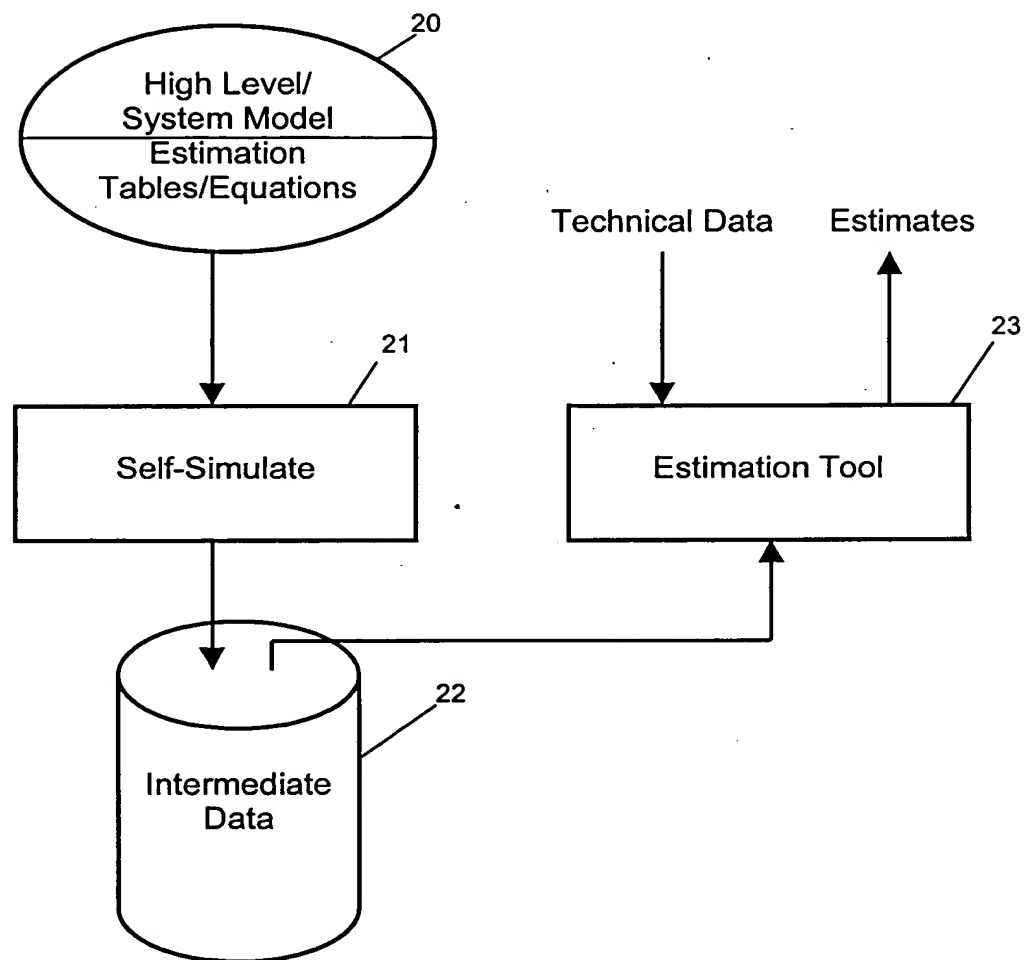


FIG. 4

```

class UART {
    unsigned toggle_count = 0;
    public Reset() {
        data_txbuf = 0, data_rxbuf = 0;
        toggle_count += TOGGLE_TABLE[RESET];
    }
    public EnableTx() {
        for( int i = 0; i < 8; i++ )
            s_out = (data_txbuf >> i) & 0x01;
        toggle_count += TOGGLE_TABLE[ENABLETX];
    }
    public WriteTxBuf(unsigned char x) {
        data_txbuf = x;
        toggle_count += TOGGLE_TABLE[WRITEBUF];
    }
    public ReadRxBuf(unsigned & x) {
        // implementation of reading character from buffer
        toggle_count += TOGGLE_TABLE[READBUF];
    }
};

```

FIG. 5

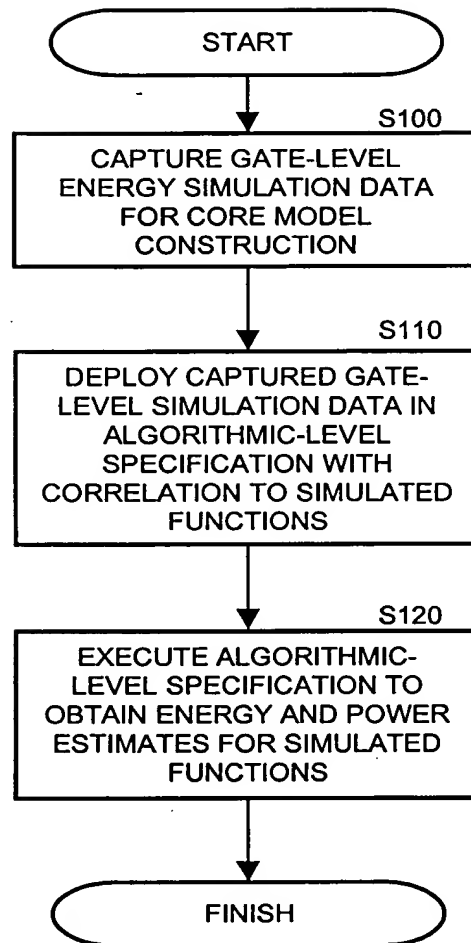


FIG. 6

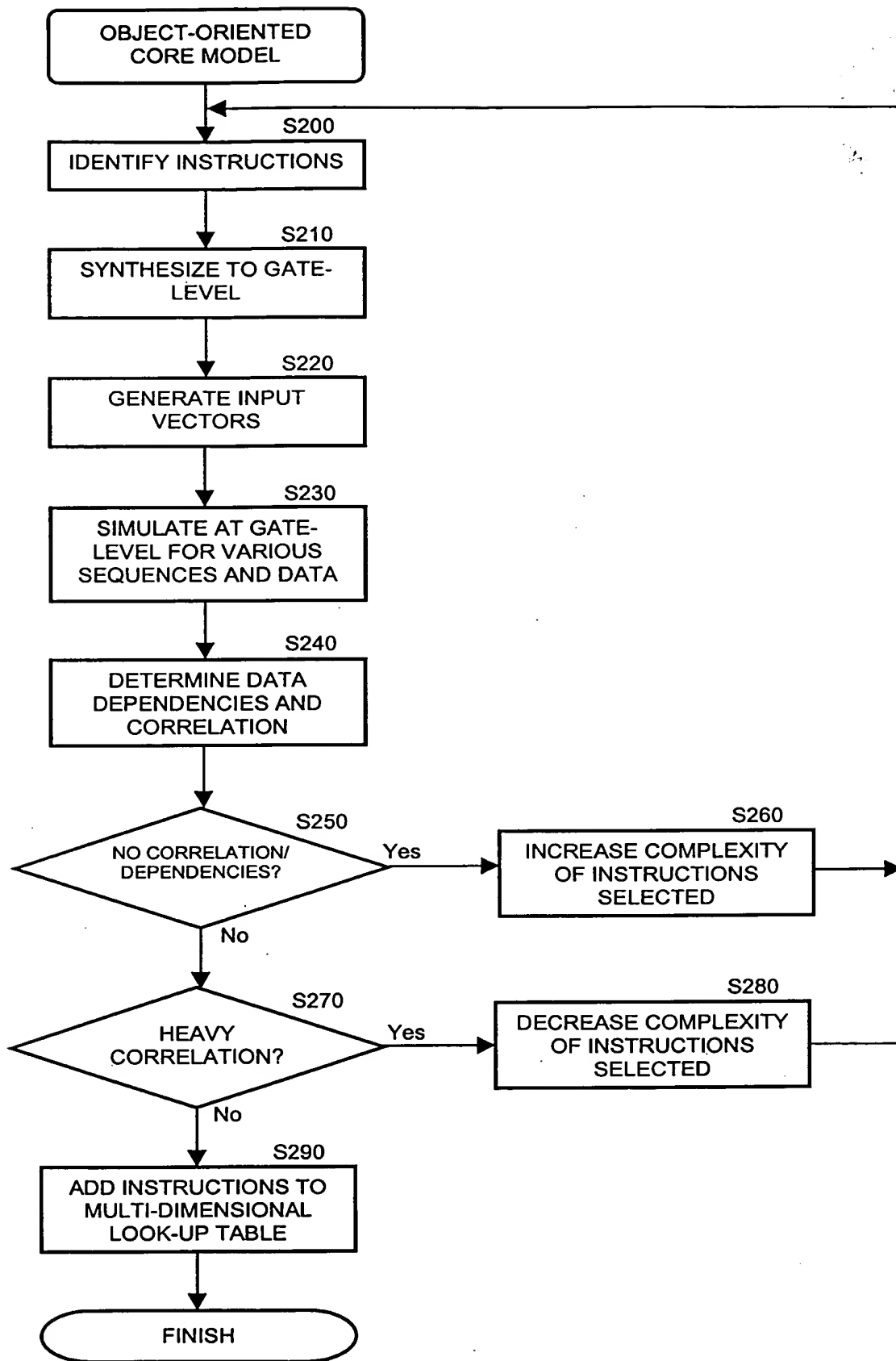


FIG. 7

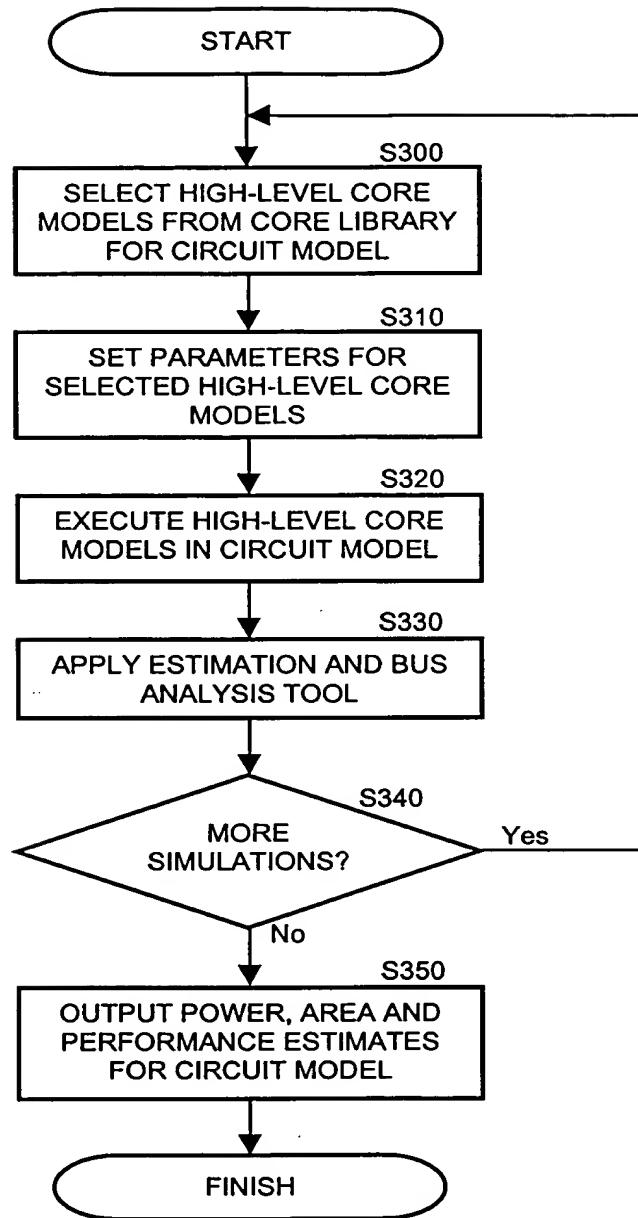


FIG. 8

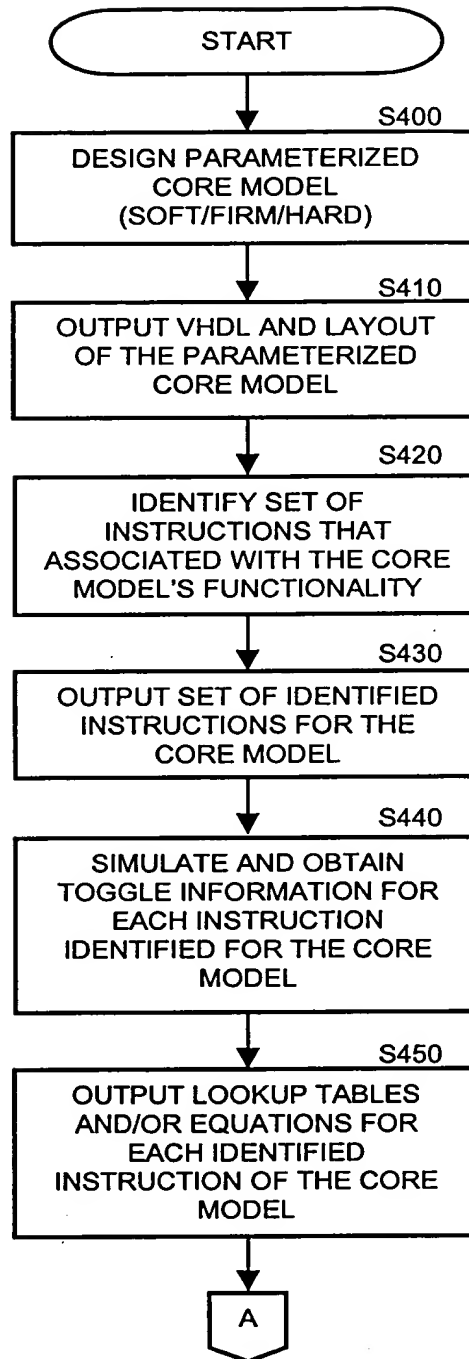


FIG. 9A

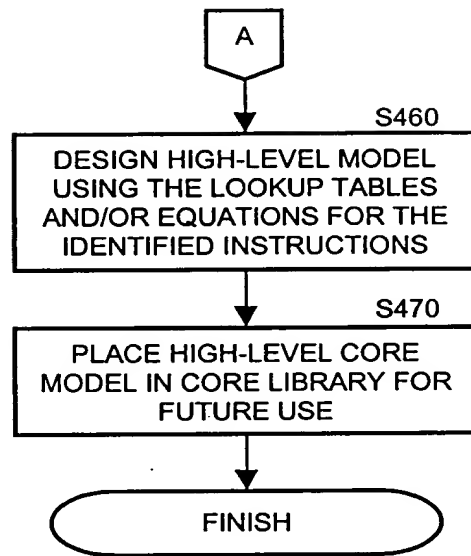


FIG. 9B

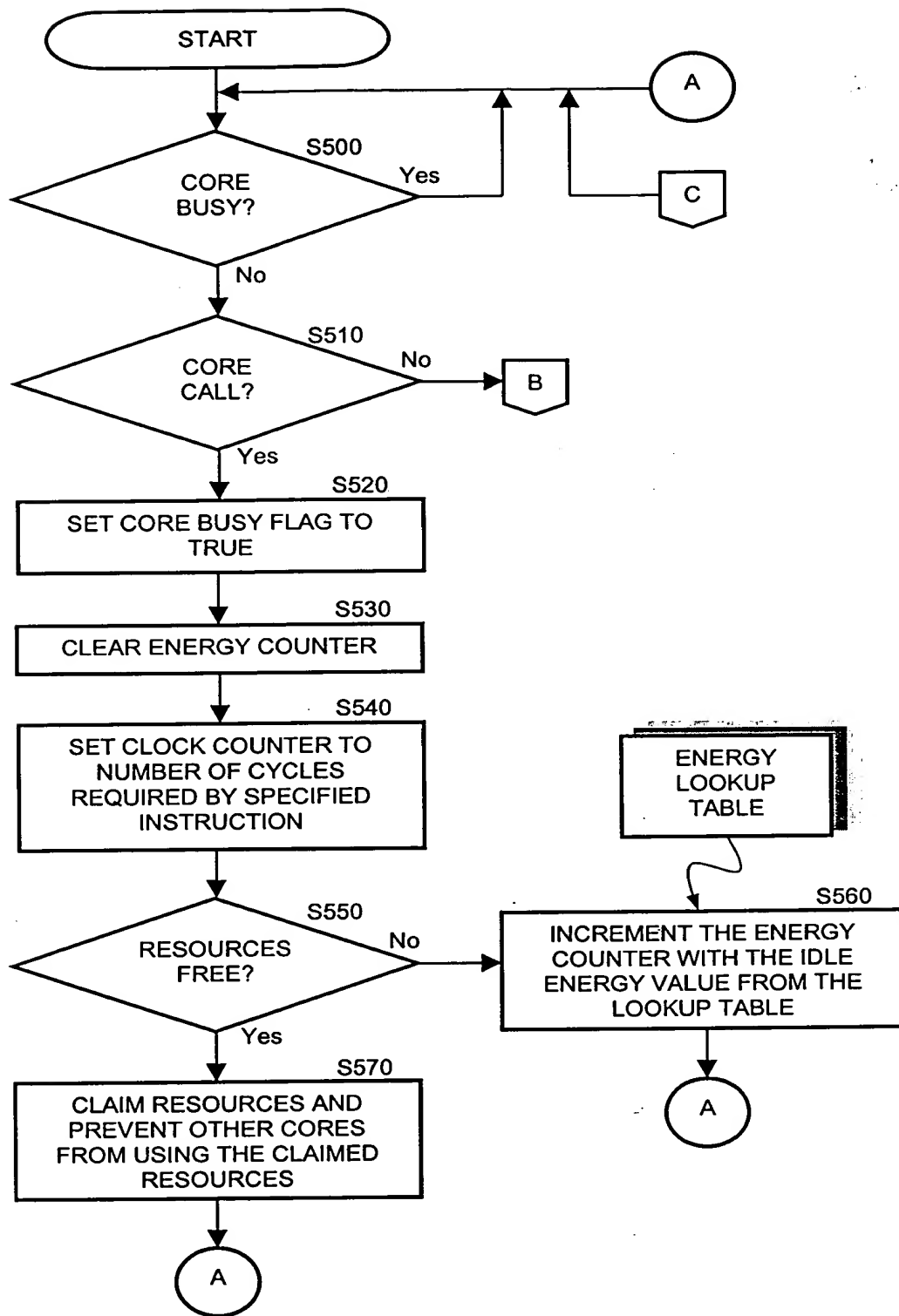


FIG. 10A

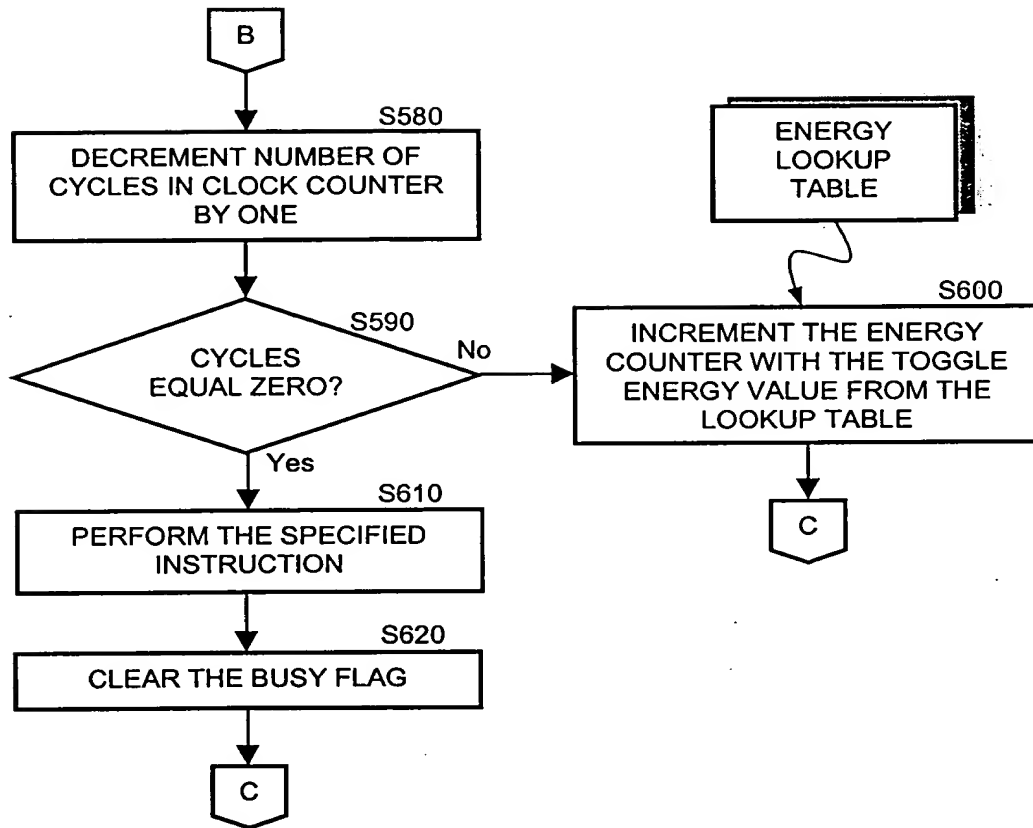


FIG. 10B

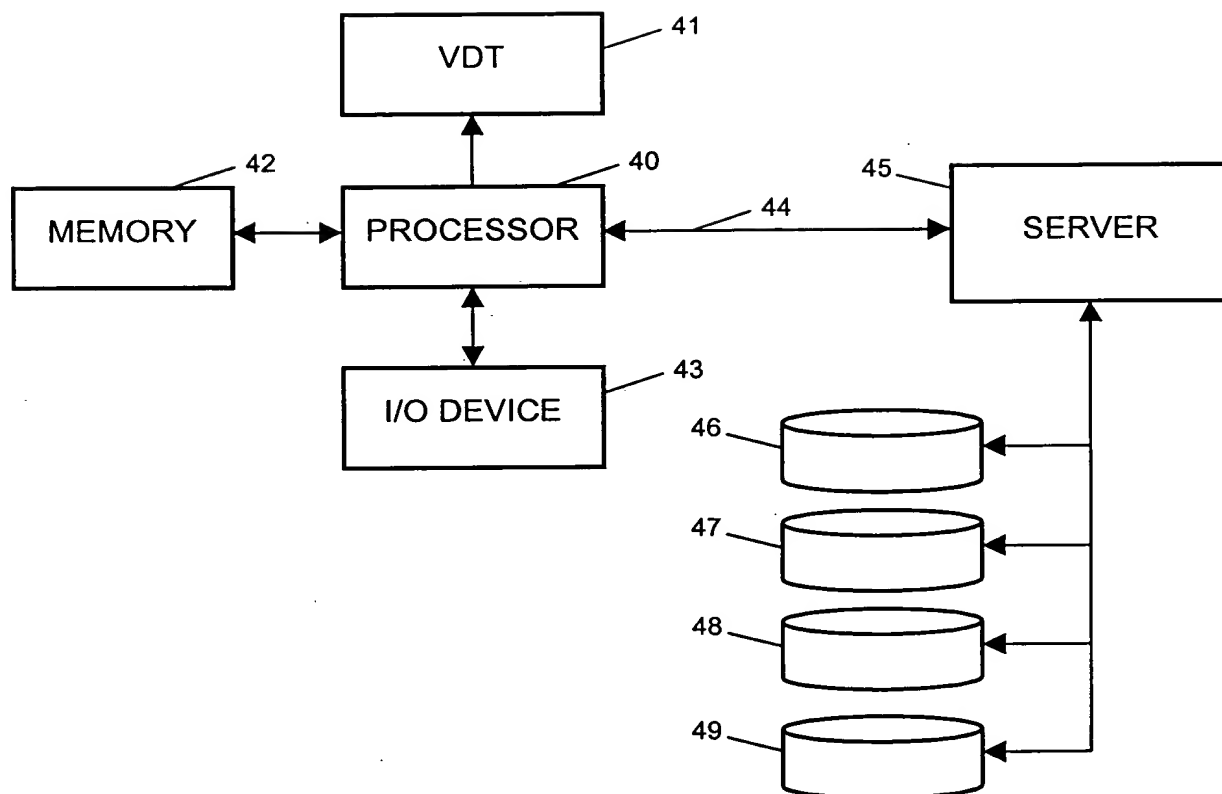


FIG. 11

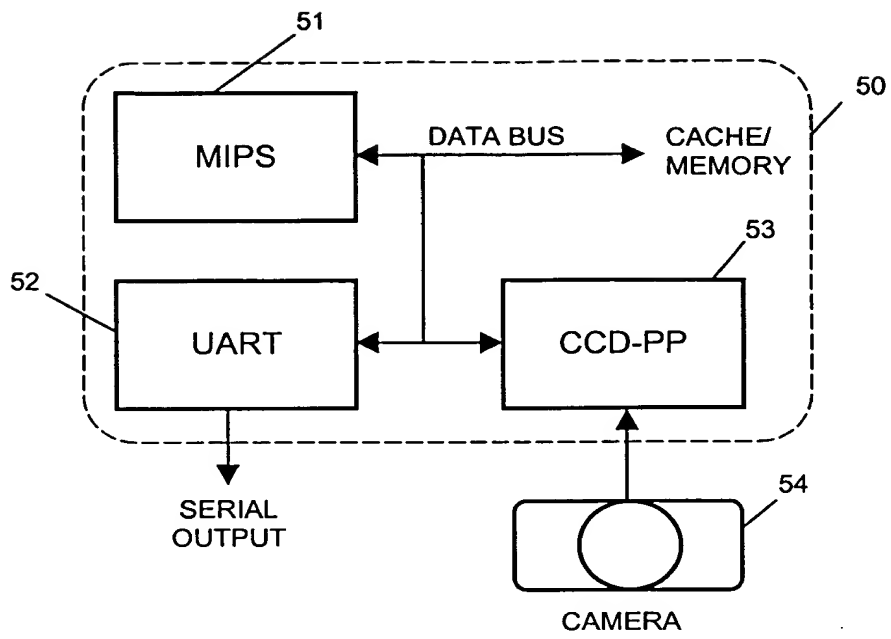


FIG. 12

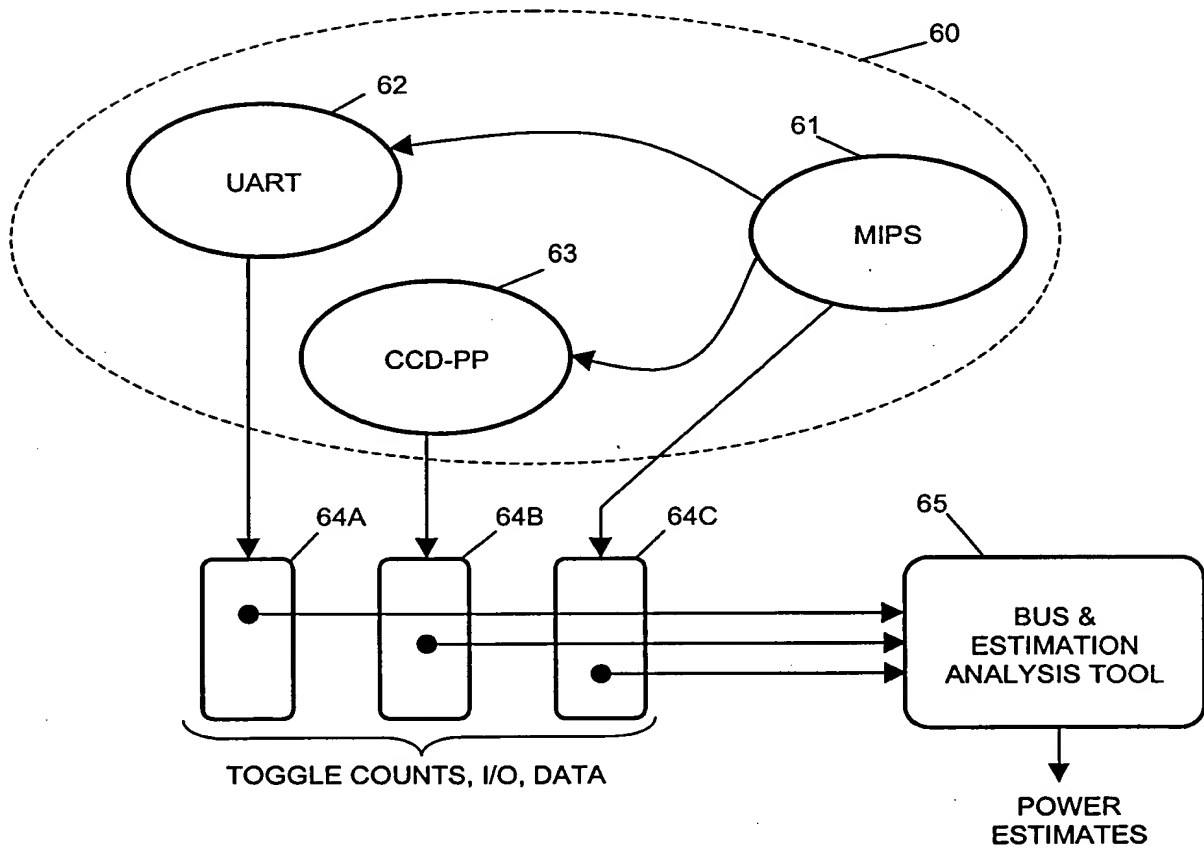


FIG. 13